

Learning and Collaboration in Technology-enhanced contexts

(computer-supported collaborative learning –
tietokoneavusteinen yhteisöllinen oppiminen)



-Introduction for the forthcoming course
<http://lecotec.wordpress.com/>





CSCL is

1. About learning

CSCL is all about learning – the learning sciences

2. About learning together

→ Shared knowledge construction, joint knowledge construction, shared meaning-making, new, deeper understanding

→ Understanding of how people learn is the basis for choosing tools and environments; and to designing learning and teaching processes.



INDIVIDUAL

- Doing tasks,
questioning, solving
problems by myself

CO-OPERATION

- dividing tasks and
problems etc.

COLLABORATION

- Sharing tasks
and problems
etc.

3. Supported by the technology



"How people learn together with the help of computer" (Stahl, Koschmann & Suthers, 2006)

A coordinated synchronous joint activity that is the result of continued attempt to construct and maintain a shared conception of a problem. (

- Bransford et al., 2002
- Sawyer, 2006
- The Journal of the Learning Sciences (2,433)
- International Journal of Computer-Supported Collaborative Learning






Computer/technology and support in CSCL?

1) Facilitates:

Provides new kind of learning experiences!

Rich interaction (H-H, H-E)

- Discussion, negotiation, planning, argumentation, questioning, proposing, conflicting, reasoning
- Different modes: talk, write, draw, listen, feel
- Makes thinking visible
- Activates: from content consuming to content producing



Trigger
effective
learning
mechanisms

2) Integrates:

- learning activities
- places and spaces (campus, home, bus, rural and city areas)
- various social media tools
- people

3) Analyses: trace data, log files



AIMS AND OBJECTIVES

Aim of the course is to provide theoretical and practical understanding on how learning can be supported and enhanced pedagogically in technological environments.

Collaborating to learn – learning to collaborate!

Academic writing, social media tools, English language

Objectives

- to understand the theoretical aspects of collaborative learning and pedagogical models in CSCL
- to design and evaluate collaborative learning in technology-enhanced environments
- to analyze collaborative learning process and to find ways for teachers and educators to implement and enhance collaboration
- to strengthen collaborative academic writing and argumentation skills

Students will review and comprehend theoretical background for collaborative learning. Students will also deepen their understanding of particular CSCL themes from both theoretical and practical perspectives.





OPPIMISEN TAVOITTEET opintojaksolla

1. Teoreettinen ymmärrys
 - Mitä CSCL tarkoittaa? Mikä merkitys? Miten tutkitaan? Mitä haasteita?
2. Käytännön harjoittelu
 - Miten minä ja me toimimme CSCL-prosessissa? Miten voimme vaikuttaa kollaboraation onnistumiseen? Miten osaamme hyödyntää teoreettista ymmärrystä kollaboraatioon?
3. Akateeminen kirjoittaminen
 - APA 6 Manual ja Academic Writing Manual (U of Ramon Llull)
4. Englannin kielen hyödyntäminen
5. Sosiaalisen median hyödyntäminen
 - Kotiblogi, työskentelyyn knol



F2f, local
meeting:
**Group
orientation**

Orientation
to the CSCL
and the
course

Understandi
ng the
basics of the
CSCL

Knol
**Individual
studying**

Theoretical basis
of the CSCL:
Three
orientations
based on the
current research
Understanding

→ On the basis
of given
material, I will
write a
manuscript with
ideas, thoughts,
insights and
questions.

Reflection of group
collaboration

Knol
**Collaborative
writing and
learning in
multicultural
groups:**

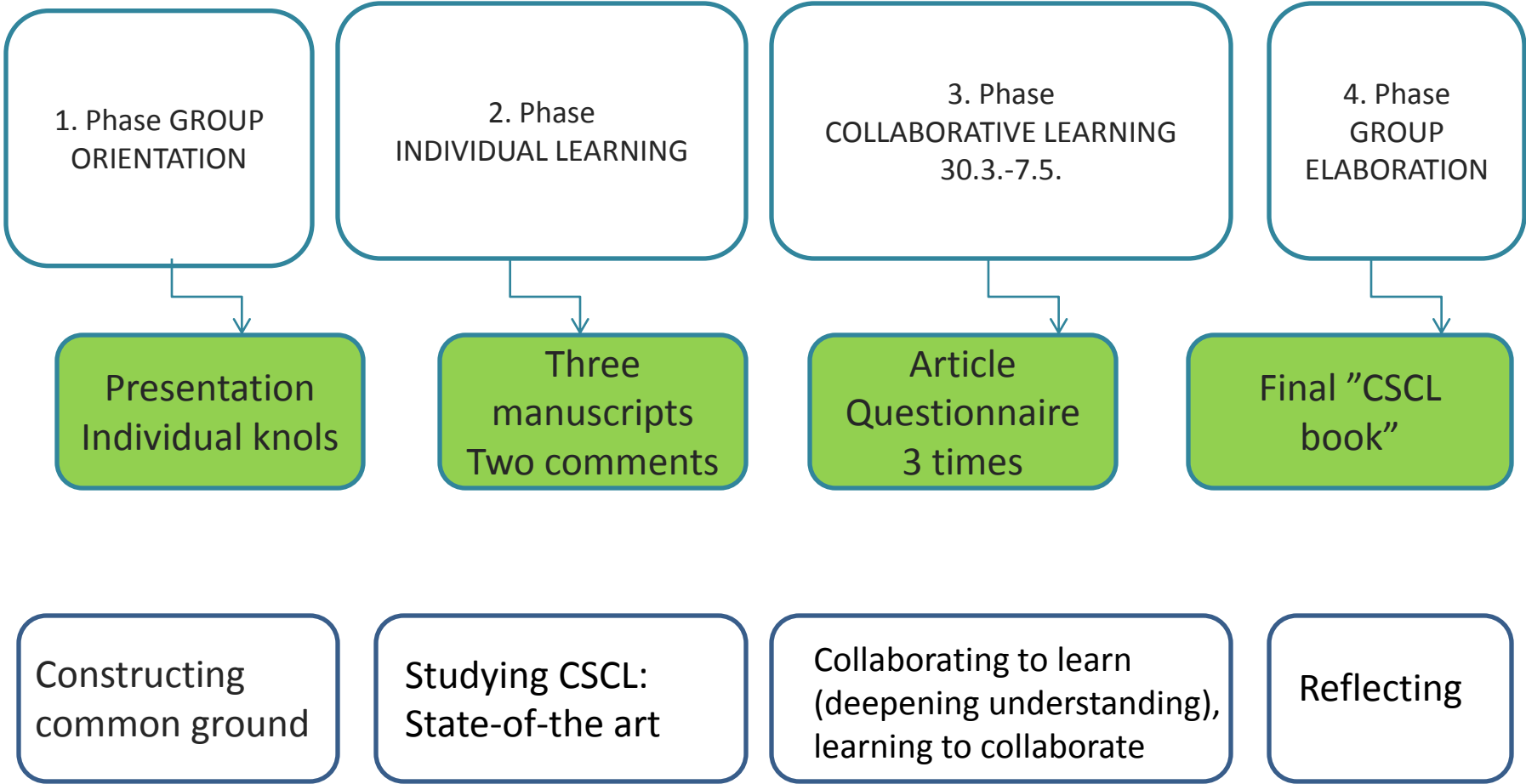
Leiden, Ghent,
Ramon Llull,
Turku and Oulu

Deepening
understanding in
one chosen topic
->
We will write an
article, followed
by academic
writing
standards (APA)

F2f, local
meeting
**Group
reflection**



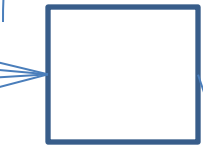
PHASES, OUTCOMES AND MAIN PURPOSES



TOOLS

Individual phase Collaborative phase (30.3.-7.5.2010)

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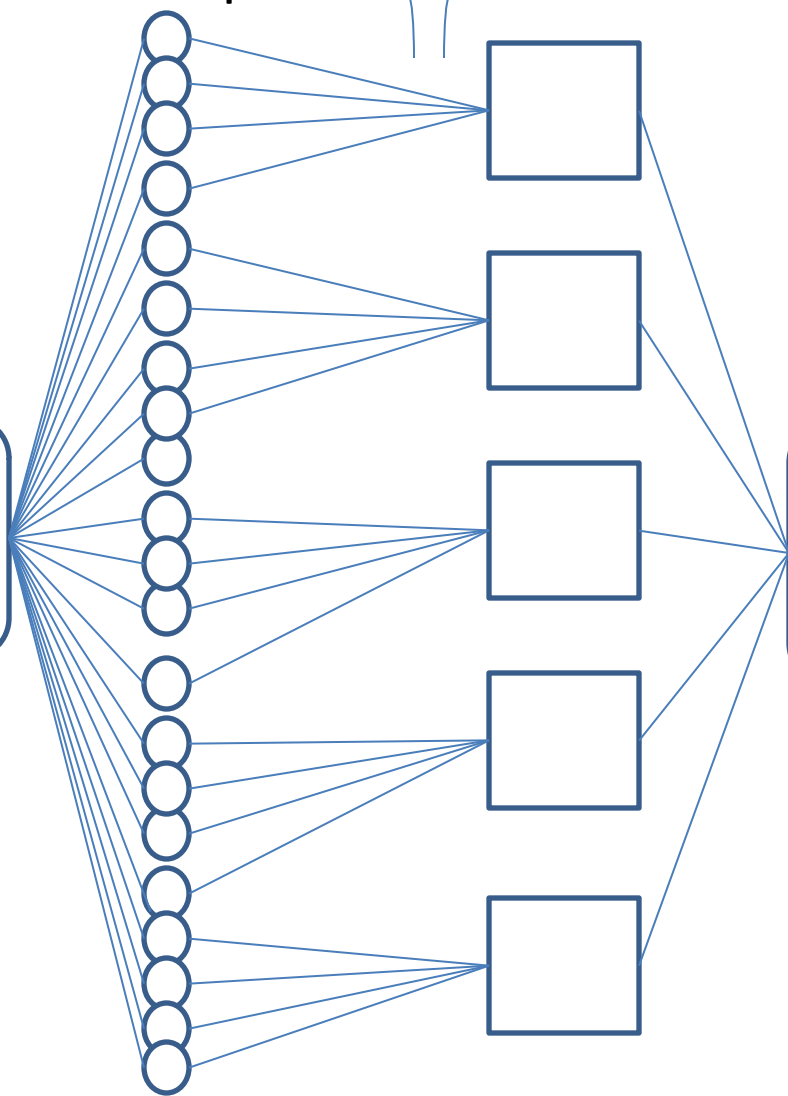
<http://tinyurl.com/yhzhw4d>

BLOG
Home of
the course

Individual
knols
Three topics

Group knols
One topic:
sub-theme

Collection of
group knols





INDIVIDUAL PHASE

1) Study the three main topics by reading the articles and listening to videos.

2) Write a manuscript of the three topics (titled as they are) using your group knol.

Manuscript is diary-type reflection, hence the aim is two-folded. First aim is to gain understanding of the four CSCL orientations by writing and the second is to provide resource material for groups for collaborative phase. This means that individually written papers do not need be written in high standard English, but rather to bring out ideas, insights, ways of understanding, examples and questions.

The three orientations could be dissected for instance through following questions:

- How is CSCL conceptualized and understood?
- How are C, S, C and L comprehended?
- What kind of learning theories are behind?
- What kind of challenges and solutions are provided?
- How CSCL is studied?
- For what context each theme/orientation could be adapted?
- What are unsolved problems, which need further research and / or discussion?
- What are your insights?

3) Visit other knols, and read and comment other manuscripts using knol's "Reviews" tool, at least two (weeks 9 and 11)

4) Choose one topic of the three to deepen your understanding, and inform it to your local tutor (not later than 22.3).

THREE MAIN TOPICS

With 3-4 sub-topics

Theoretical perspectives of Collaborative Learning and CSCL

1. Motivation and emotions in CSCL
2. Structuring and scripting CSCL
3. The structure of communication on CSCL environments





CENTRAL CONCEPTS

Structuring and Scripting in CSCL environments

How learners assign actions in such a way that they will carry out in turn the action specified or perform a predefined series of specific action (Weinberger, 2003).

- Macro scripts: to push learners in those kind of activities that promote interaction, but no specific support (longer time)
- Micro scripts: to scaffold interaction process providing sentence starters, questions prompts or descriptions.
- External scripts
- Internal scripts
- Ideal scripts
- Actual scripts

→ From macro to micro scripting

→ Roles

How external scripts can be gradually replaced by self-regulation (individual and shared)?





CENTRAL CONCEPTS

Self-regulated learning (in CSCL environments):

- How learners develop learning skills and use them effectively (Boecarts, Pintrich & Zeidner, 2000)
- Active, constructive process whereby learners set goals and attempt to plan, monitor, regulate and control their cognition, motivation, behavior and context (Boekaerts et al., 2000; Schunk & Zimmerman, 1994; Winne & Hadvin, 1998)

- Cognitive regulation
- Emotion regulation
- Motivation regulation

} Social

Individual and socially shared regulation as complementary →
group can construct motivation
(Järvenoja & Järvelä)

→ Sosio-emotionaaliset haasteet: tietoisuustyökalu

CENTRAL CONCEPTS

Communication / Presence

- Social presence: Participants as real persons
- Cognitive presence: Construct and confirm meaning
- Teaching presence: Enhance social and cognitive presence – design and organizations, facilitating discourse and direct instructions



TOPICS

An example of one student's path
dealing with topics during the course

F2F/CSCL orientation
Definitions
History and future

Motivation and
emotions in
CSCL

Structuring and
scripting CSCL

The structure of
communication
on CSCL
environments

Motivation and
emotions in
CSCL

Structuring and
scripting CSCL

The structure of
communication
on CSCL
environments

Structuring
by tutor

Scripting
by roles

Scripting
argumenta
tion

Scripting
by labeling

F2F/CSCL
Group reflection: what have
we done, what have we
learned


University of Oulu

University of Ramon Llull, Barcelona, Spain. We participate as experts and researchers on "CSCollaborative and Regulated Writing". *Montserrat Castelló* and *Anna Iñesta* participate as coordinators of the course and *Marta Pardo* and *Margarida Romero* as local teachers. Our role in the course is 1) to provide students with insights on the academic genre previous to the collaborative phase so that they become familiar with some of the strategies they will be able to use when working on the knol, and 2) to make suggestions, in different moments of the writing process, aimed towards the enhancement of the texts produced by the different collaborative groups.



Professor
Montserrat
Castello





Ghent University, Belgium. Our theme is "Structuring and scripting CSCL". ...

<http://www.ugent.be/en>

Ghent University, abbreviated to UGent, is one of the major universities in the Dutch-speaking region of Europe. It distinguishes itself as a socially committed and pluralistic university in a broad international perspective.

❖ De Wever Bram, Schellens Tammy, Raes Annelies, & Valcke, Martin



Leiden University, Netherland

<http://www.leiden.edu/>

Leiden is a typical university city, hosting the oldest university of the Netherlands (1575). University buildings are scattered throughout the city and students that live and study in Leiden give the city its relaxed and vivid atmosphere. Leiden is especially attractive to visit, because the city and region offer an amazing range of temptations.

❖ Jan-Willem Strijbois

University of Turku, Finland "The structure of communication on CSCL environments"

❖ Tuire Palonen

let.oulu.fi / pirkko.hyvonen@oulu.fi

UNIVERSITY of OULU
OULUN YLIOPISTO





COLLABORATIVE PHASE

1) Meet your group and discuss about group collaboration

- How to keep the group active and productive; how to interact and manage with challenges
- Plan schedule
- Discuss about manuscripts and your experiences
- Discuss about roles
- What are possible a) problems or disadvantages, b) possible contexts c) possible aims. that you may provide answers or solutions in this article?

2) Decide and define

- Aim, question(s) or problem, and context
- Start collaborative writing process


3) Understanding context

- Find more information and deepen your understanding of the context
- Keep on writing

4) Understanding theoretical basis

- Find more information and deepen your understanding of the theoretical basis of the topic
- Define central concepts
- Keep on writing





5) Constructing “the solution” for the problem/question(s)

- Construct the output, where you provide answers for the question/problem
- Keep on collaborative writing process

6) Conclusion

- Conclude your topic and write discussion
- Discuss and decide order of authorship
- Still writing

7) Abstract and key words

- Write abstract and define key words (3-5)
- Discuss and decide order of authorship.

8) Finalizing and publishing

- Re-read and edit your article
 - proofreading
 - references

MATERIALS

- APA 6 Manual
- Collaborative Writing Manual
- Articles (your topic and sub-topic)
- Additional articles





SCRIPTING BY ROLES DURING COLLABORATIVE PHASE

Everyone takes part in the discussion and writing process, and seeks external information.

1) STARTER

Initiate the discussion and writing

2) SUMMARIZER

Make summaries, make conclusions during discussion and writing process

3) MODERATOR

Monitor discussion and writing process and ask critical questions, and inquiries for others' opinions; point out questions, concerns that had not yet answered; encourage participation

4) THEORIZIAN

Introduce theoretical information and ensure that all relevant theoretical enter the discussion and article

5) WRITING COACH

Be at the students' disposal in case of doubt regarding the *Academic Writing Manual*, supervise the other students' writing process and provide comments and insights as to aspects that would require some editing for the text to attain the highest possible standards in the academic writing genre.

(More information available in Ghent articles)





STRUCTURE OF THE ARTICLE

Authors

Title

Abstract (150-200 words)

Key words: (3-5)

Introduction (Background, context, aim and objectives - questions)

Central concepts

Main body (- answers)

Conclusions

References






ACADEMIC WRITING

- 1) Please follow the instructions of APA 6 manual.
- 2) [Academic Writing Manual](#) guides you in your writing process.

The *Academic Writing Manual* is a complement to the APA 6 manual and provides information on three main aspects which research on academic writing regulation has revealed as key for university students to produce high quality academic texts. The first of such aspects refers to the **1) organization of information**, that is, to those issues that relate to the structure of the text, the sections that the paper should have, the information to be included in each section and how each of these sections must be written. The second section examines **2) when and how the author should make him/herself visible**, which resources are used to make his/her own position clear and also prevent the text from sounding little academic or impersonal. Finally, the third section refers to some resources used to engage the readers and to make proper **3) use of citations**.

- 3) [Academic Writing Strategies](#) delivers more information about the role of Academic Writing Strategies in this course.





QUESTIONNAIRE; Reflection of group collaboration

Successful computer-supported collaboration is a challenging process, not only because for knowledge creation, but also because of socio-emotional challenges in natural learning situations.

Socio-emotional challenges interact with cognitive challenges, both in individual and group level. Our earlier courses has shown that emotional states tend to regulate students and their learning, whereas students should regulate their emotions both in groups and individually.

One way to learn to regulate socio-emotional challenges, which also gives way for learning, is to reflect the entire group process. In 2008 AIRE questionnaire was used, and it revealed that the most notable challenge was uneven participation in collaborative writing.

[Questionnaire form is available here](#)

- 1) For students awareness tool
- 2) For teachers it provides a valuable insight for how to develop design of courses, teaching and learning, particularly in international contexts with complex environments.
- 3) For researchers it is useful for evaluating both the socio-emotional challenges during the collaboration, and for assessing the AIRE tool.





Promise of CSCL:

CSCL is the most promising innovation to improve teaching and learning with the help of modern information and communication technology.

- Effective under certain circumstances: it should stimulate and activate knowledge construction mechanisms in individual learners! Collaborative learning does not happen easily.





Challenges:

1. Socio-emotional-motivational challenges

Is social interaction taken for granted? How to get students to know each others? How to encourage them to joint writing?

”---but I was afraid to do this at the very begining because, once more, we can see emotions are very important **and I didn't want to hurt others changing the text.**”

”--to the chapter of emotions I also would have done some "strong" changes, **but I didn't dare** --- instead, I added / completed / changed / justified some information which was, honestly, much more laborous.”

How to get students to work same time?


”Again, I know my collaboration has been late, but it has been intense and I have the feeling I have worked hard.”

Main socio-emotional challenges, 2008:

- Our goal for the project was different (27%)
- One/some people were not fully committed to the goup task (20%)
- Group member participation was not equal (15%)

”I have lost everybody exept from Linda!”





2. Students may have different prior knowledge and conceptual understanding

→ Ensuring common ground?

3. Learning strategies and self-regulation skills may have not developed / supported adequately.

4. Technologies afford complex learning environment, tasks, and situations, which is crucial for expert learning

→ Too challenging, too complex?

→ Tutoring, coordination and time

→ Structuring and scripting

→ Roles

5. The roles and tasks of teachers and tutors are not defined or instructed.

Peer tutoring?

“everything seems to go in the right direction and everybody seems to be happy :)”

Student view

1. phase

F2F

I take actively part in the local meeting.

I create my knol.

We present ourselves.

I take a good look at the process and materials of the course.

2. phase

1. I start my knol.

2. I study the three main topics of CSCL

3. I write manuscript (knol) of each topics

4. I comment manuscripts of two other students.

5. I choose one of the three main topics and inform my teacher about it.

3. phase

We meet our group and discuss about our collaboration.

I read manuscripts and learning materials of our topic and subtopic.

We deepen our understanding and write our article.

We discuss and re-write regularly.
We finish the article.

I fill in the questionnaire 3 times during this phase.

4. phase

F2F

I take actively part in the local meeting and group-reflection

Teacher's view

1. phase

**Before the
course
begins**

I prepare
topics and
materials

I prepare for
f2f meeting

I discuss
with my
colleagues
etc.

F2F
I make sure
the students
understand
the basics
and create
common
ground of
CSCL, etc.

2. phase

I take care
(tutoring) of
my students.

I collect and
send students'
topic choices (to
Pirkko)

I make sure
that ...

3. phase

I take care
(tutoring) of
the groups,
who have
chosen my
topic.

I prepare for
f2f meeting.

I make sure
that students
fill in the
questionnaires.

4. phase

F2F

**After the
course**



KNOL

Knol: individual and collaborative learning phases
Each student creates his/her individual knol
(www.knol.google.com)

Each student should register knol by her/his name and add a photo; choose “open collaboration” model.

Link students’ knols to the home blog (lecotec.wordpress.com → students’ knols) – name knols by students’ name.

<http://lecotec.wordpress.com/students-blogs/>

